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ABSTRACT

The Spanish-speaking school pupulation in the Northeast has grown significantly in size, but not in success in recent years. The Coleman Report revealed widespread and sustained inequality of educational opportunity for Puerto Ricans. However, the limited amount of other research on Puerto Rican students indicates that the problem lies in the schools rather than in the students. That is, the deficiencies that Puerto Rican children show in verbal ability and academic achievement might not exist if initial instruction and testing were in Spanish, the children's native language. This study sought to demonstrate this using a population of 217 first-grade Spanish-speaking children in Connecticut. The Interamerican Test of General Ability, Level I, was administered by the same male bilingual examiner first in Spanish and then in English. The Puerto Rican first graders scored significantly lower on the English forms than all ethnic groups, including Puerto Rican, in Coleman's study on the subtest of verbal ability; however, on the nonverbal ability subtest, the Puerto Rican first graders in this study scored significantly higher than all ethnic groups in the Coleman study. The subjects of the study scored significantly higher on the Spanish form than on the English form. (Author/JM)

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THE ACADEMIC ACHIEVEMENT OF SPANISH-SPEAKING FIRST GRADERS IN CONNECTICUT

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The Spanish-speaking school population in the Northeast has grown significantly in size, but not in success in recent years. Although comprising almost one-fifth of the New York City school population, less than one-fiftieth of the Puerto Rican pupils received academic diplomas in 1963.[1]

An increasing proportion of the incoming Puerto Rican population has been settling in Connecticut. A recent survey of Puerto Ricans leaving the San Juan Airport, for example, found that Hartford ranked third in the cities of destination.[2] The enrollment of Spanish-speaking students in Connecticut public schools has reached almost 20,000, with the concentration of such students being close to 20 per cent in the Hartford and Bridgeport school systems.[3]

However, the relative neglect accorded the Spanish-speaking students has been reflected in the small amount of research on their educational achievement. It was not until the Colemen Report that the sustained and severe inequality of educational opportunity for Puerto Rican children was revealed on a widespread basis. Puerto Rican pupils scored generally lower than any other ethnic group in the country on tests of achievement in grades 1-12, particularly on tests of verbal ability.[4]

However, the limited amount of other research on Puerto Rican pupils indicates that the problem lies in the schools rather than the students. That is, the deficiencies that Puerto Rican children show in verbal ability and academic achievement might not exist if initial instruction and testing were in the children's native language, Spanish. Mattleman and Emans, for example, found that Puerto Rican pupils revealed significantly lower scores of oral ability in English than a corresponding sample of black pupils.[5]

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1. Frank M. Cordasco, "The Puerto Rican Child in the American School," Journal of Negro Education, XXXVI (Spring, 1967), p. 183.

2. Statistics of Personal Interviews at Airport, San Juan, Puerto Rico, January-December, 1970 (Hato Rey, Puerto Rico: Catholic Aid to Puerto Rican Emigrants, 1971). (Mimeo)

3. Bureau of Research, Statistics and Finance, The Distribution of Minority Group Pupils and Staff in the Public Schools of Connecticut (Hartford: Connecticut State Department of Education, April, 1970).

4. James S. Colemen et al., Equality of Educational Opportunity (Washington, D.C.: U.S. Government Printing Office, 1966), pp. 221-289.

5. Marcienne S. Mattleman and Robert L. Emans, "The Language of the Inner City Child: A Comparison of Puerto Rican and Negro Third Grade Children," Journal of Negro Education, XXXVIII (Spring, 1969), pp.173-179.

However, when given the opportunity to respond in either Spanish or English in a separate study, Puerto Rican children achieved significantly higher scores in oral ability than corresponding samples of both black and white children.[6]

Moreover, despite repeated reminders by Gaarder, most writers and researchers seem to have forgotten a major study of Puerto Rican pupils in Puerto Rico conducted by the International Institute of Teachers College, Columbia University in 1926.[7] This study involved the administration of some 69,000 standardized achievement tests in English and Spanish. The results of the study indicated that although English had been imposed as the language of instruction in Puerto Rico since the United States took control in 1898, the Puerto Rican children's achievement through English showed them to be significantly below that of continental American children. However, their achievement through Spanish showed them to be, by and large, markedly superior to the achievement of continental American children through English.

METHOD

Subjects

The subjects of this study consisted of 217 first-grade Spanish-speaking children in Connecticut. The students were chosen from representative schools in Bridgeport, New Britain, and New London in proportion to the general enrollment of Spanish-speaking students in these cities. The number of subjects and total enrollment for each city is as follows:

	No. of Subjects	Total Enrollment
Bridgeport	167	(4805)
New Britain	40	(255)
New London	10	(1137)

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6. Anne Anastasi and Cruz de Jesus, "Language Development and Nonverbal IQ of Puerto Rican Preschool Children in New York City," Journal of Abnormal and Social Psychology, XLVIII (July, 1953), pp. 357-366.

7. A. Bruce Gaarder, "Statement Before the Special Subcommittee on Bilingual Education of the Committee on Labor and Public Welfare, U.S. Senate, May 18, 1967," Florida Foreign Language Reporter, VII (Spring/Summer, 1969), p.34

Instrumentation

The instrument utilized in this study was the Interamerican Test of General Ability, Level I (hereafter referred to as "TOGA-I"). This instrument is the general readiness test for pupils beginning grade 1. The test was expressly constructed to have parallel forms in Spanish and English. These parallel forms have been found to yield generally equivalent scores. In addition, alternate forms are available for each language. The reliability coefficients between these alternate forms have been found to be generally high.[8]

The authors of the Colemen Report selected the TOGA-I as the criterion test of achievement in grade 1. This test was administered in its English form only to a nationwide sample of several thousand first graders of various ethnic backgrounds during October, 1965.[9]

TOGA-I consists of the following four subtest:

1. Oral vocabulary (25 items)
2. Number (15 items)
3. Association (20 items)
4. Classification (20 items)

For purposes of comparison with the results of the Colemen Report, only the results of subtest 1 (as an indicator of verbal ability) and subtest 3 and 4 (combined as an indicator of nonverbal ability) are reported.

Procedure

The TOGA-I was administered by the same male bilingual examiner first in Spanish and then in English. The test administration in each language was divided into two periods, one for the verbal ability section and the other for the nonverbal ability section. The testing was conducted on consecutive days during October, 1970. The test was administered in groups of 15-25 pupils each, with the assistance of 1-2 paraprofessionals.

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8. Technical Report: Tests of General Ability and Test of Reading - Interamerican Series: Forms CE, DE, CES, DES (Austin, Texas: Guidance Testing Associates, 1967).

9. Coleman, pp. 577-580

RESULTS

The results on the English forms of the TOGA verbal and nonverbal ability sections for the total Connecticut sample of this study and for the nationwide sampling of various ethnic groups in the Coleman Report are given in Figures 1 and 2.[11]

It can readily be seen that the Puerto Rican first graders in the study scored significantly lower than all ethnic groups, including Puerto Rican, in Colemen's study on the subtest of verbal ability. However, on the nonverbal ability subtest, the Puerto Rican first graders in this study scored significantly higher than all ethnic groups in the Colemen study.

The results of the Puerto Rican first graders in this study are given in Table 1.

TABLE 1

Means and standard deviations of the TOGA verbal and nonverbal sections.

	VERBAL			NONVERBAL		
		Mean	SD		Mean	SD
Spanish	P<.01	13.50	4.51	P<.01	13.60	9.00
English		11.10	4.91		15.20	9.36

It can be seen that the subjects of the study scored significantly higher (P<.01) on the Spanish form than on the English form of the verbal ability section of the TOGA. However, the reverse was true for the nonverbal ability section.

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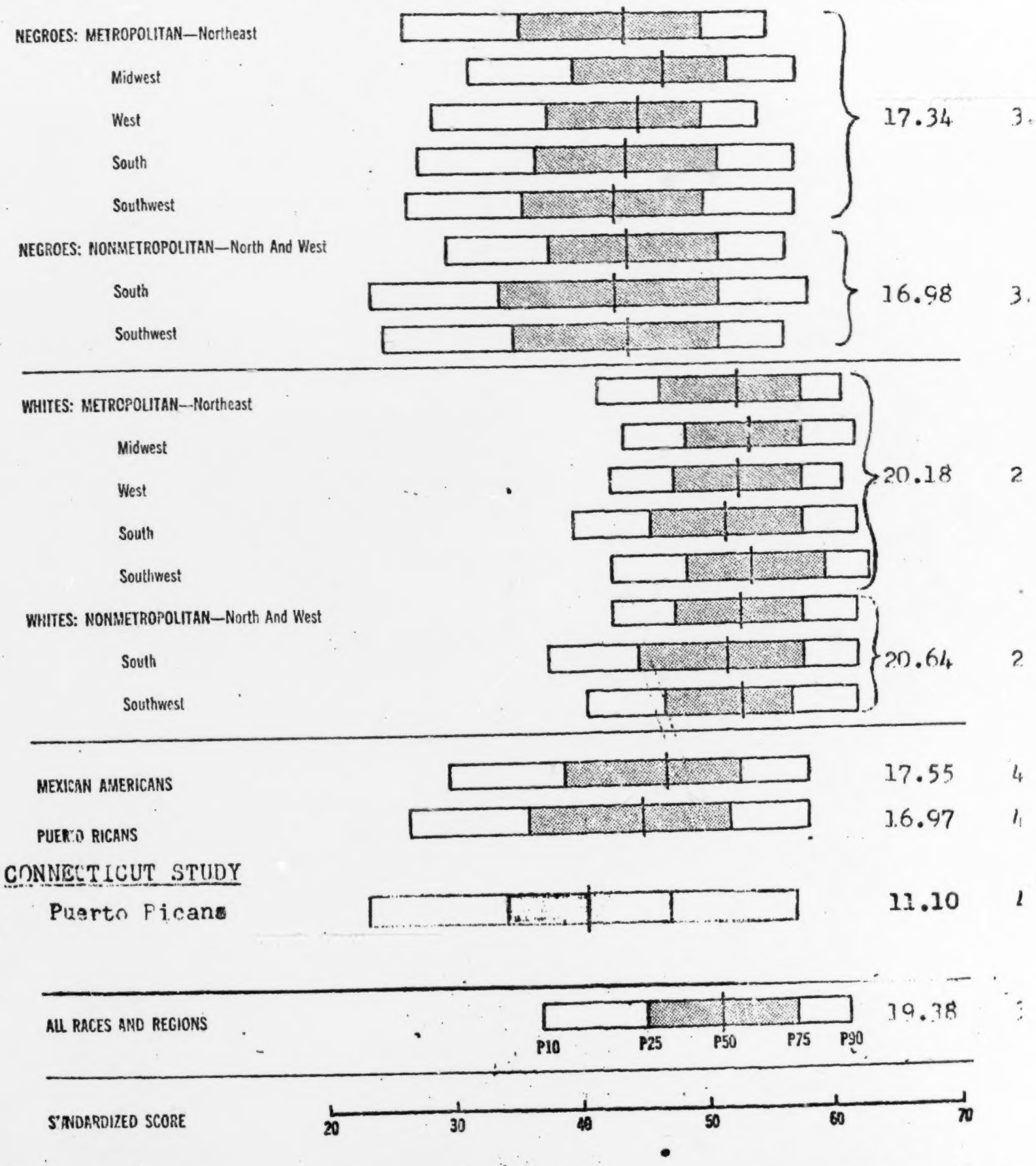
11. The raw scores of the Colemen Report achievement testing were secured in telephone calls to Mr. Eugene Hixson of the National Center for Educational Statistics at USOE on December 18 and 23, 1970.

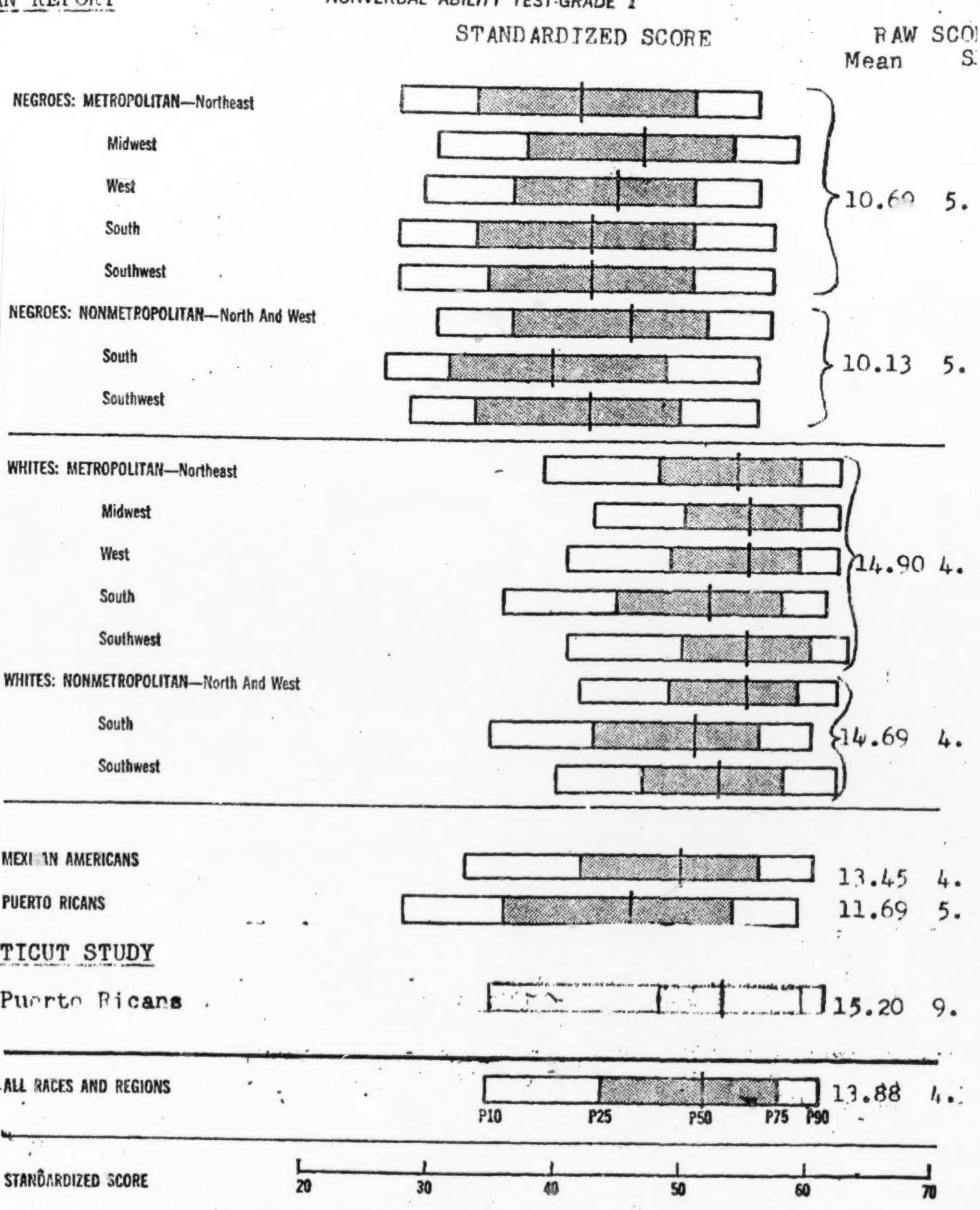
FIGURE 1
VERBAL ABILITY TEST-GRADE 1

COLEMAN REPORT



COLEMAN REPORT

FIGURE 2
NONVERBAL ABILITY TEST-GRADE 1



DISCUSSION

It is difficult to discuss the results without first considering the possible practice effect resulting from the administration of the English form of the TOGA-I soon after the administration of an alternate form in Spanish. In a subsequent study, Zirkel and Greene found no significant practice effect between the Spanish and English alternate forms of the verbal ability section of the TOGA-I.[12] However, there is reason to believe that there may be a practice effect between the Spanish and English alternate forms of the nonverbal section. Since the key to successful performance on the association and classification subtests of the nonverbal ability section lies in securing the central concept (viz., part-to-whole, similarity v. difference) of each, it would seem that practicing with the directions and items in one language would benefit performance on a parallel subtest in the other language.

It would thus seem that the English scores in the nonverbal ability sections, whether compared to the Spanish scores or the Coleman results, of the TOGA-I may be somewhat inflated. Thus, clarifying whether the nonverbal scores on the English version were actually significantly superior to the nonverbal scores on the Spanish version merits further study. In light of the significant difference in favor of the Spanish scores in the verbal section, the relative position of the Spanish and English scores on the nonverbal section would seem to be in doubt.

The central conclusions of the study, however, remain rather clear-cut. The relatively high nonverbal ability scores on the Spanish as well as English forms indicate that the Puerto Rican first grades in Connecticut stand well in comparison to their counterparts of other geographic areas and of other ethnic backgrounds with regard to "readiness" or "concept development."

However, that this relatively high nonverbal ability level has not been realized through initial instruction and testing in Spanish can be seen in the relatively low verbal ability scores in English. That the verbal ability scores are significantly higher on a parallel test in Spanish provides another piece of evidence supporting the growing movement of bilingual-bicultural education programs where the native language of the child is used as a vehicle rather than an obstacle to equal educational opportunity.

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12. Perry A. Zirkel and John F. Greene, "The Use of the Inter-american Subtest of Oral Vocabulary as an Indicator of Language Dominance" (in process)